

Part Two

Analysis

You have received another DataSet on airlines flights in the United States, including information about the number, length, and type of delays. The data is reported for individual months at every major airport for every carrier.

As a CEO of a major airline, what does this data tell you? What do you recommend the CEO to do in terms of changing hubs, routes, managing delays better or any other recommendations?

Please present it in a PowerPoint (or Google Slides) format, you can share your data analysis work if you want

Excel Dashboard

Airport Delays Analysis

% Flights Delayed	% Flights Cancelled	% Flights Diverted	% Flights On-Time
20.28%	1.82%	0.23%	77.67%

Year

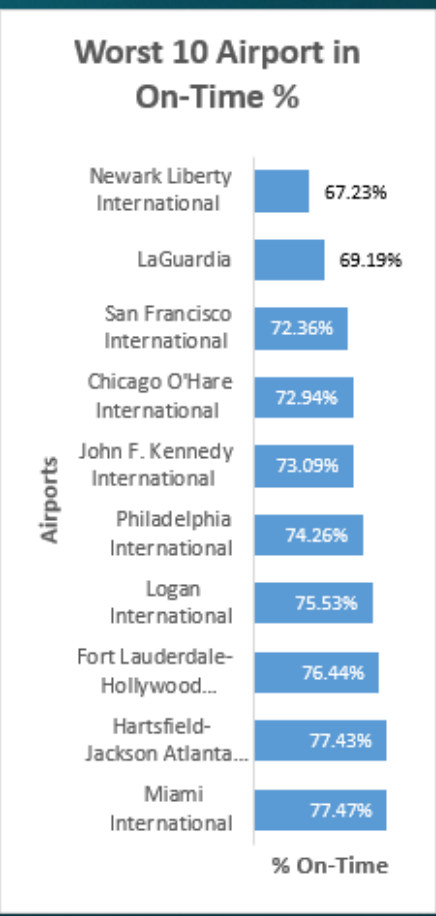
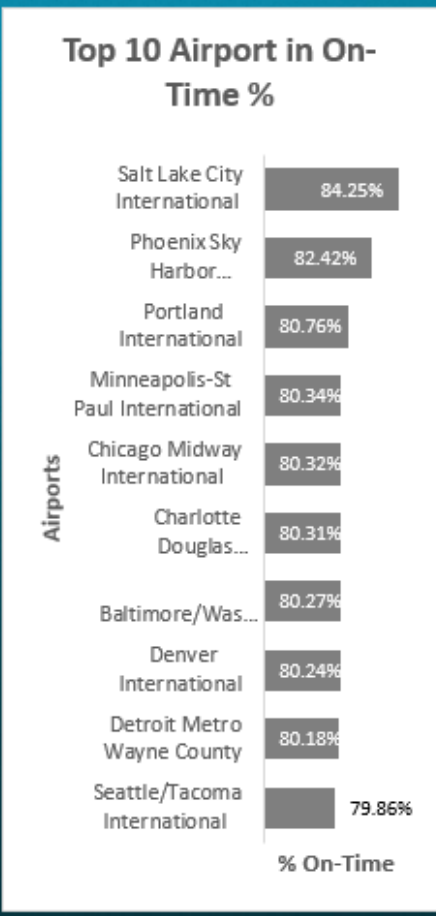
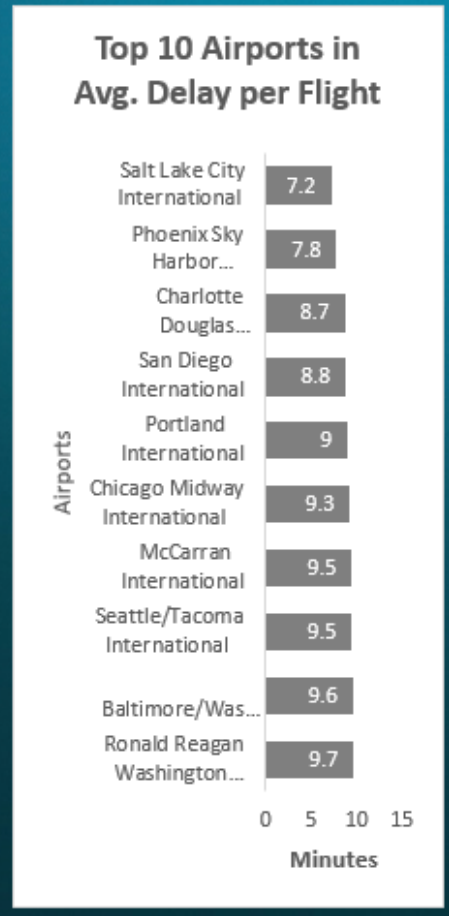
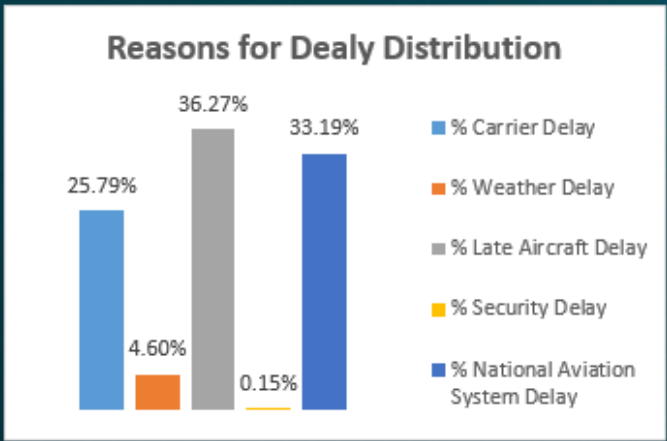
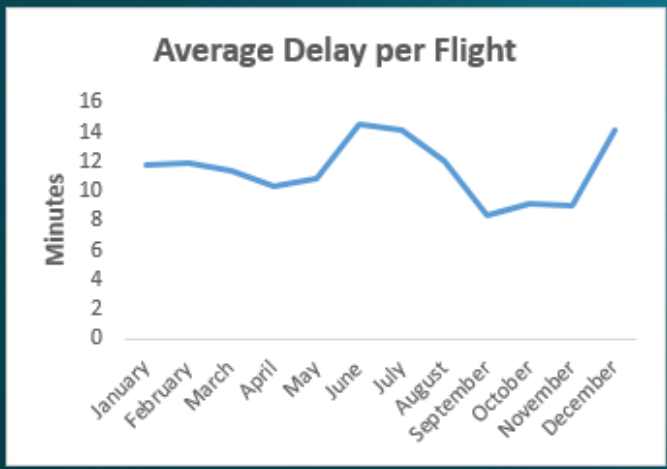
2003

Quarter

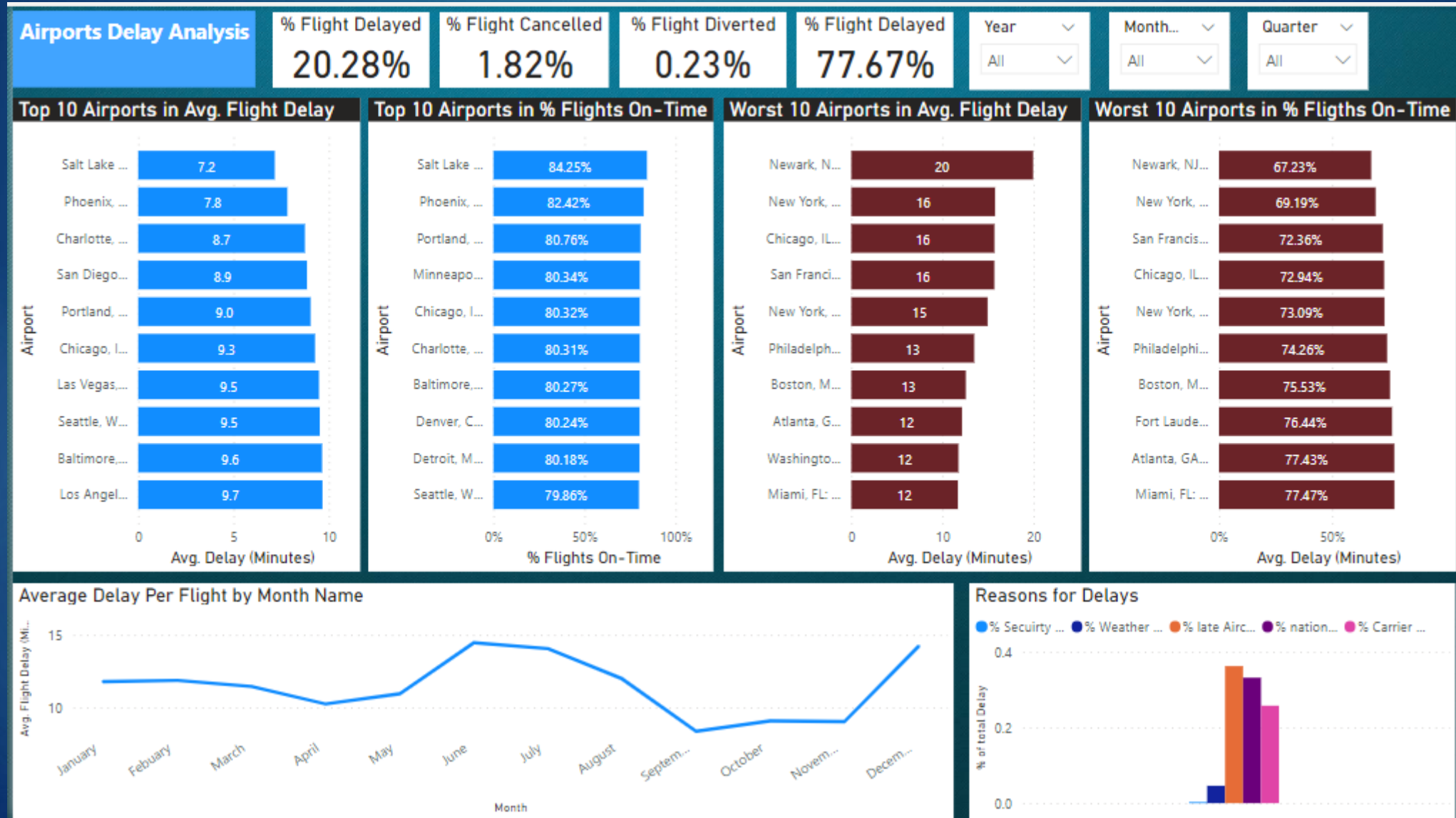
Q1

Month

January



Power BI Dashboard



Airports Delay Analysis



Agenda

- ▶ Introduction.
- ▶ Objective of the Analysis.
- ▶ Challenges with the Dataset.
- ▶ General Metrics.
- ▶ Delay Timeline Through the year.
- ▶ Delay Reasons.
- ▶ Top 10 Airports.
- ▶ Worst 10 Airports.
- ▶ Insights & recommendations.

Introduction

- ▶ The Analysis is based on a dataset of more than 4256 records of internal flights in the USA.
- ▶ The total number of columns in the dataset after “Data Wrangling” is 25 columns.
- ▶ The time-frame of the analysis extends from June 2003 till January 2016.

Objective of the Analysis

- ▶ To provide insights for the CEO of startup airline company.
- ▶ To show the potentials delays that the airline may encounter in different airports.
- ▶ To show the top airports with the minimum delays time so that the airline company can direct its business resources towards benefiting from the situation.


Challenge with Dataset

- Several columns with several values.
- Which columns to use?


J		K		L		M		N		O		P		Q	
Carrier Delays Coun		Late Aircraft Delays Coun		National Aviation System Delays Coun		Security Delays Coun		Weather Delays Coun		Carriers.Total		Flights Cancelled Coun		Flights Delay	
1009		1275		3217		17		328		11		216			
374		495		685		3		66		14		138			
296		477		389		8		78		11		29			
300		472		735		2		54		11		73			
283		268		487		4		58		13		74			
516		323		684		11		98		13		34			
986		1390		2147		19		258		13		394			
376		371		570		6		71		11		123			
322		519		1948		10		121		13		102			
247		256		427		5		34		11		13			
320		295		573		3		66		13		101			
376		228		394		21		28		11		24			
511		678		624		17		64		12		39			
T		U		V		W		X		Y		Z			
Flights Total Coun		Minutes Delayed Carrie		Minutes Delayed Late Aircra		Minutes Delayed National Aviation Syste		Minutes Delayed Secur		Minutes Delayed Weathe		Minutes Delayed Tota			
30060		61606		68335		118831		518		19474		269764			
9639		20319		28189		24400		99		4160		77167			
8287		13635		26810		17556		278		6201		64480			
8670		14763		23379		23894		127		3792		65885			
6510		13775		13712		20999		120		4141		52747			
11691		26634		18969		23538		706		5581		75428			
27628		76918		80714		90574		683		20632		263521			
11754		21802		18715		16482		139		3529		60867			
12506		20190		30905		91048		490		7880		150513			
4662		12547		14600		14335		141		2080		44303			
8419		16754		18074		25807		182		4712		65529			
5778		22029		11593		14103		659		1951		50335			
11759		24293		31043		19561		808		3628		79533			
18462		40089		39655		26162		2559		5969		114434			
8908		17384		18954		41007		191		5323		82859			
7617		17707		26116		18073		56		3188		65140			
7061		8535		20938		10702		331		2456		42962			
4900		12609		12700		22976		66		3840		52191			
12194		27468		20994		23137		529		6131		78259			
30195		54296		55855		135851		604		10401		257007			
4746		8260		11909		5943		505		1028		27645			
9069		16478		31005		45538		21		4131		97173			
14008		26912		27458		18673		768		2620		76031			
6851		15034		15747		10449		223		1762		43215			
9246		22647		28119		13860		1097		2950		68673			
10183		22673		17879		45407		1138		3390		90487			
10582		16227		13883		10512		556		1685		42863			
5401		11012		18558		19078		112		2604		51364			
30875		87261		116728		184740		356		29189		418274			
9972		28610		36619		26323		10		5024		97186			

Data Standardization

- ▶ Data Standardization for Comparison.
- ▶ Average Delay per Flight.
- ▶ % of On-Time Flights

Formula:  [Check DAX Formula](#)

=ROUND(SUM(FlightsDelay[Minutes Delayed Total])/SUM(FlightsDelay[Flights Total Count]),1)

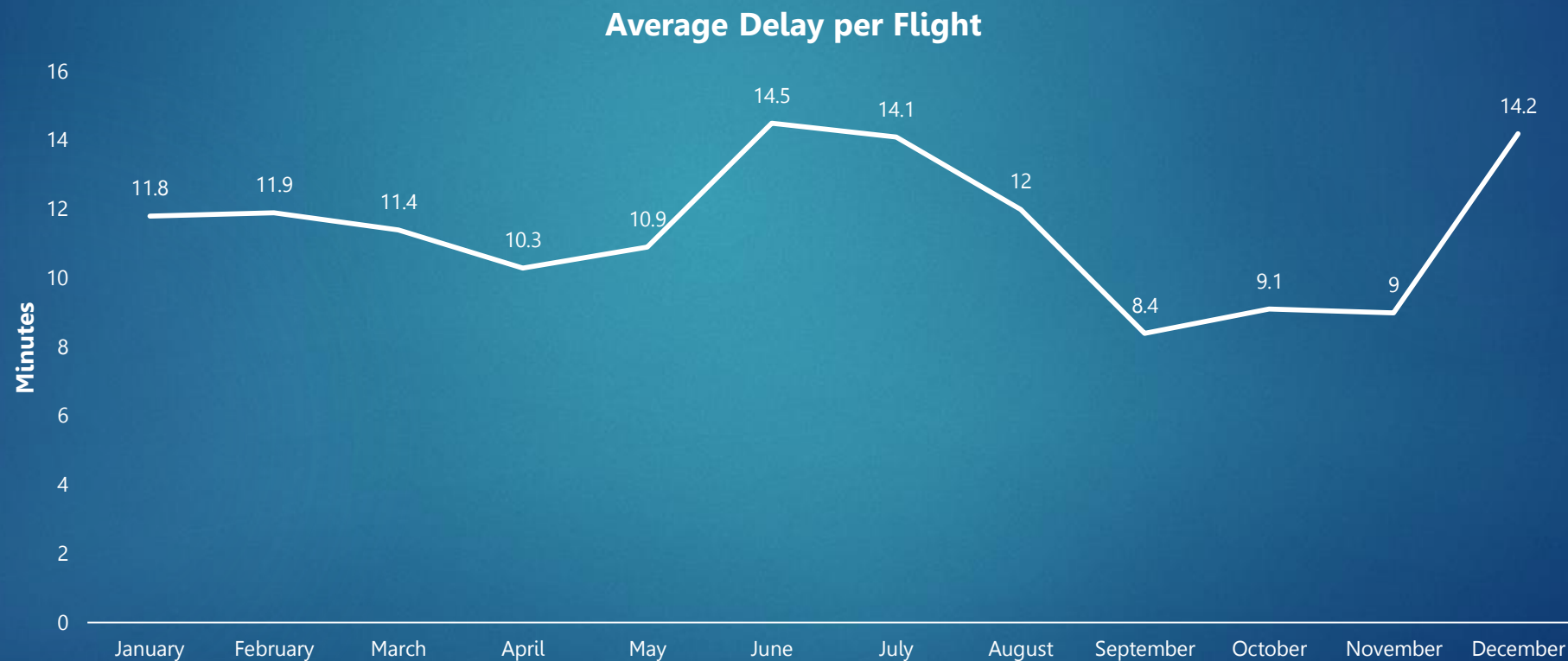
Formula:  [Check DAX Formula](#)

=SUM(FlightsDelay[Flights On Time Count])/ SUM(FlightsDelay[Flights Total Count])

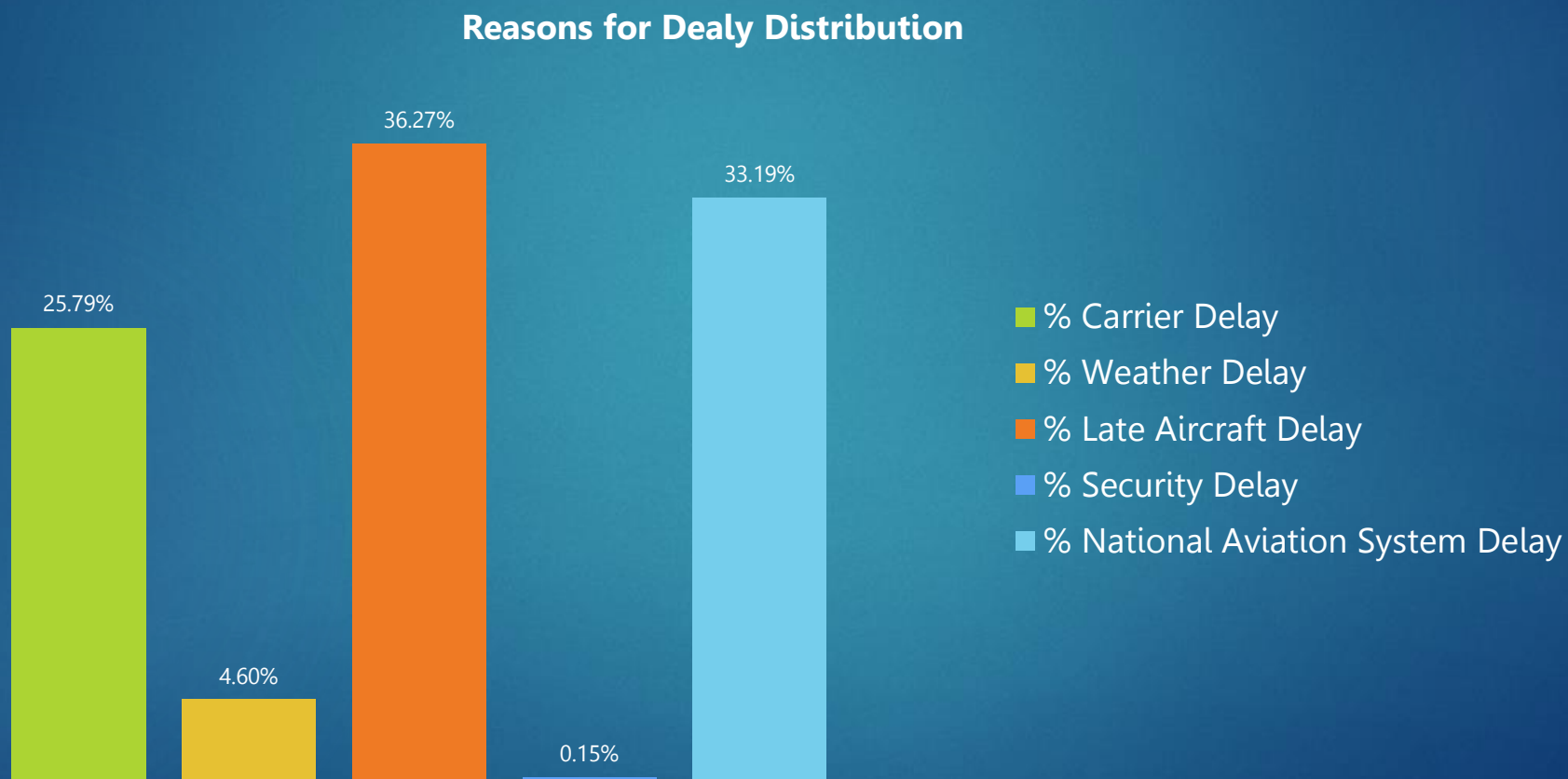
General Metrics

- ▶ % Flights Delayed = 20.28%.
- ▶ % Flights Cancelled = 1.82%.
- ▶ % Flights Diverted = 0.2 %.
- ▶ % Flights On-Time = 77.67 %

Delay Trend Through the Year

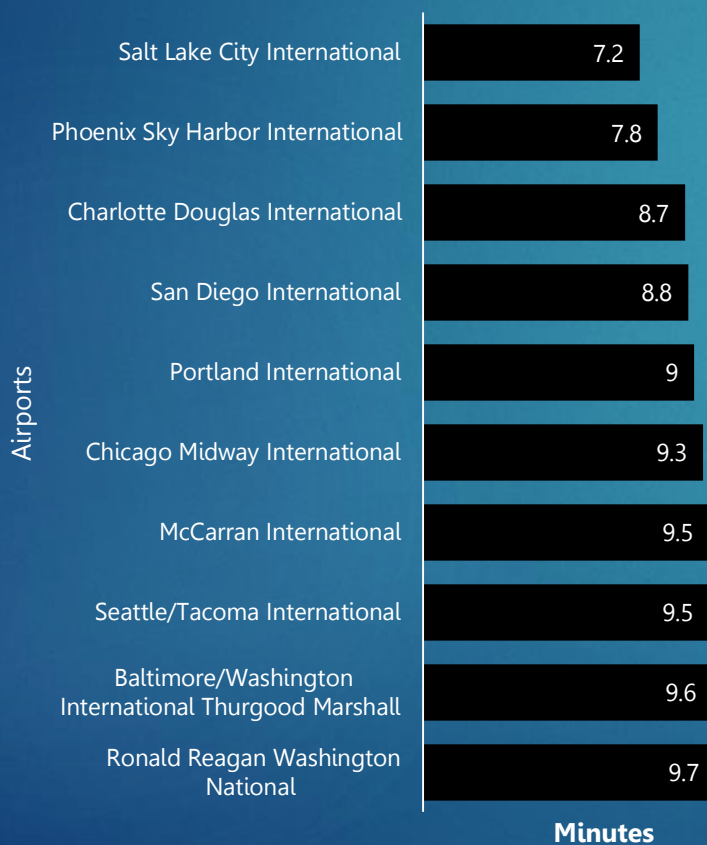


Distribution of Delay Reasons

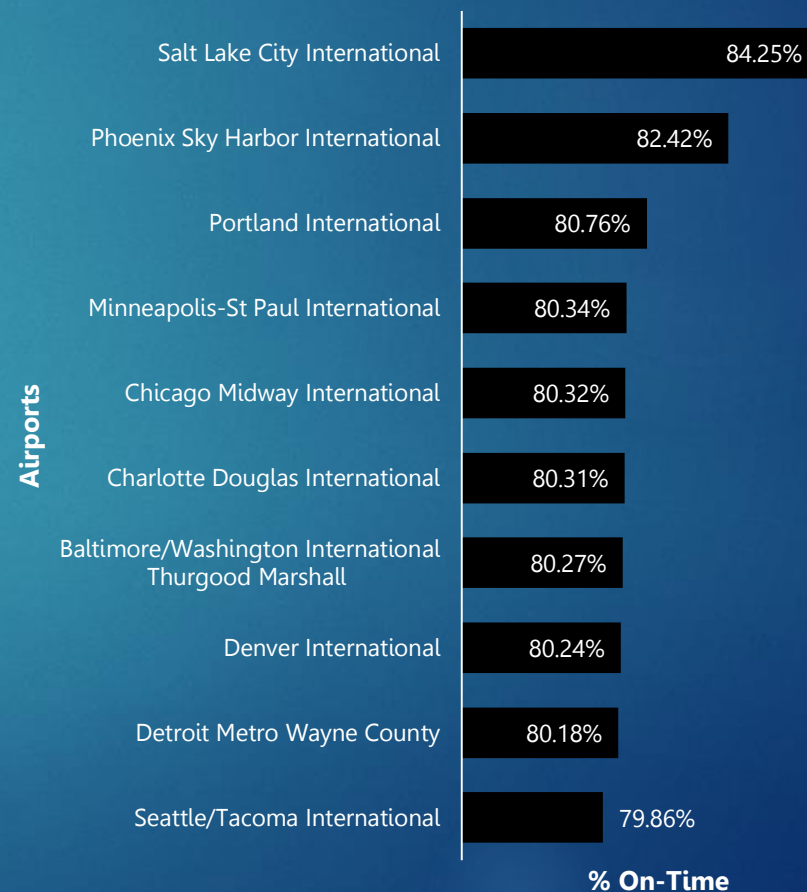


Top 10 Airports in Delay Time

Top 10 Airports in Avg. Delay per Flight

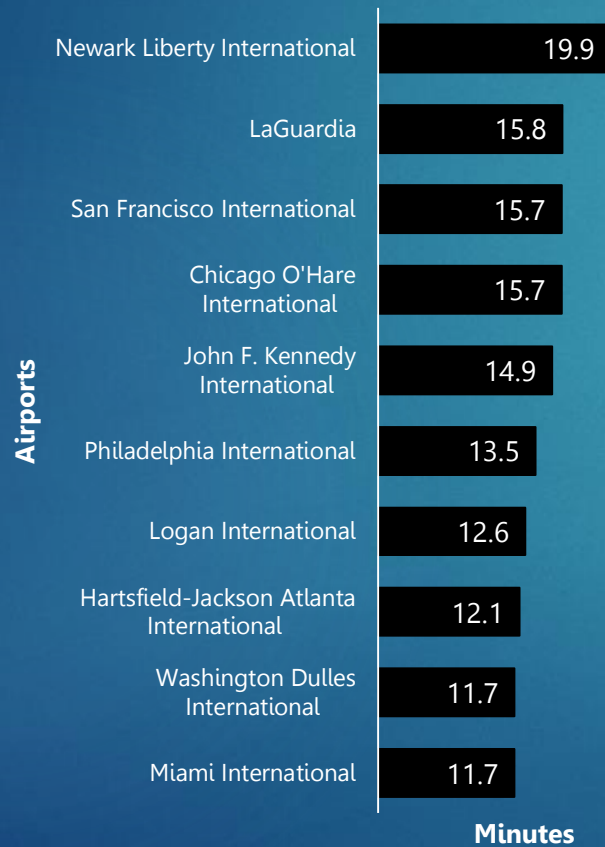


Top 10 Airport in On-Time %

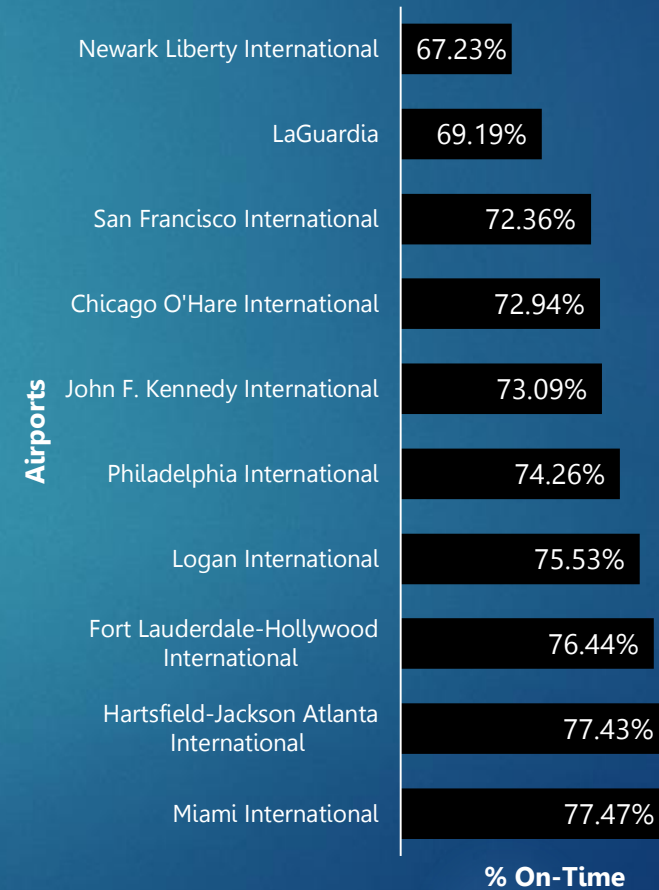


Worst 10 Airports in Delay Time

**Worst 10 Airports in Avg. Delay
per Flight**



Worst 10 Airport in On-Time %



Insights and Conclusion

- ▶ The company should weigh things out by looking to the general metrics to see if they are suitable for more investment in the business.
- ▶ The company should make a plan to avoid delay surge during May, June, July and December.
- ▶ The top management should talk to politicians to address the issue of National Aviation System Delay.
- ▶ The company should investigate the reasons for Late Aircraft Delay (is it due to staff or machinery and how to reduce it).